THE DEATH-FEINTS OF ALOBATES PENNSYLVANICA DeG., AND ALOBATES BARBATA KNOCH.

By Harry B. Weiss

Hibernating specimens of both species of darkling beetles were tested during the last week of April, 1944, in order to determine the duration of their death-feints. All specimens were kept at a room temperature of 72° F., several days before testing in order to fully bring them out of hibernation. Death-feints occurred when they were picked up or when they were pressed gently, ventrally or when dropped through a distance of six or twelve inches. Some beetles required a lot of handling and others very little in order to bring on the death-feint. The ventral surface of the thorax appeared to be the most sensitive area. When the stimulus was applied to the dorsal surface the death-feint did not occur. It was impossible to apply the stimulus with equal force each time when it was done by hand, and it is not known if there is any connection between the force of the stimulus and the duration of the reaction. However, it does not seem likely that there is, in view of the fact that a gentle stimulus was just as liable to promote a long or short death-feint as a hard stimulus. Although different degrees of pressure and different amounts of handling were required to initiate the death-feints, both the sensitivity of the individual and the duration of its reaction probably depend upon the variable organization of its nervous and motor mechanism.

Alobates pennsylvanica DeG.

Ten specimens of this species were induced to feign death at Fahrenheit temperatures of 72° and 82°. The durations of the death-feints are shown in the following table. Some beetles rested dorsally and others ventrally during the death-feint, but neither position appeared to affect the duration of the reaction.

Successive death-feints in the same beetle became progressively, irregularly shorter. One beetle refused to react after the eight-

DURATION OF DEATH-FEINT

Beetle	At 72° F. April 19	At 82° F. April 26
	Seconds	*Seconds*
A	778	394
B	266	105
C	62	24
D	138	262
E	247	520
F	43	230
G	129	173
H	1,095	160
I	35	620
J	1,851	380
Average	464.4	268.8

eenth successive death-feint; another after the sixth, and many of them after the third or fourth.

Alobates barbata Knoch.

The durations of the death-feints of ten specimens of this species at Fahrenheit temperatures of 72° and 84° are shown as follows:

DURATION OF DEATH-FEINT

Beetle	At 72° F. April 20	At 72° F. April 25	At 84° F. April 25
	Seconds	*Seconds*	*Seconds*
A	163	25	48
B	165	306	35
C	6	406	86
D	30	40	180
E	227	213	15
F	414	152	265
G	340	85	154
H	97	41	92
I	76	56	7
J	315	475	20
Average	183.6	179.9	90.0

Successive death-feints in the same beetle of this species were generally similar to those reported for *Alobates pennsylvanica.*

Both species reacted alike except for the fact that the death-feints of *A. pennsylvanica* endured longer than those of *A. barbata.* When the temperature was increased 10 or 12 degrees the average duration of the reaction declined approximately one-half, for both species.

Apparently there is a variation in the sensitivity of different individuals, to the external stimuli initiating the death-feint and also in the period of recovery. These variations are probably due to differences in the quality of the labile compounds in the receptive and conductive parts of the nervous system and in the contractile muscle tissue. The destructive chemical action involved in the reaction to the stimulus and the restoration of the discomposed substances require different periods of time for different individuals. A high temperature apparently hastens recovery. It would be of interest to know if internal stimuli play any part in the restorative processes.

INSECT FOOD HABIT RATIOS OF NEW YORK STATE

By Harry B. Weiss

At various times during the past 15 years I have wondered if a food habit classification of the species of insects recorded from New York would show ratios that differed materially from those of other sections such as New Jersey, Connecticut, etc. In order to satisfy my curiosity, I finally classified according to their family food habits 15,343 of the 15,449 species recorded in "A List of the Insects of New York," M. D. Leonard, Editor-in-Chief, that was published January, 1928, as Memoir 101 of the Cornell University Agricultural Experiment Station. The Anoplura, Mallophaga and Siphonaptera were omitted because of their non-relation to vegetation or to other insects, likewise a few other species, difficult to classify. Considering the large number of species involved, these omissions are relatively unimportant.

The difficulty of classifying families of insects in accordance with the food habits of their members is fully appreciated and the weaknesses of such a classification have been admitted in a former paper.[1] The terms saprophagous, phytophagous, etc., are used in their broadest sense and I am aware that such conclusions as may be drawn from food habit classifications are broad generalizations.

[1] Insect Food Habit Ratios of North Carolina and Mount Desert Island, Maine. Jour. N. Y. Ent. Soc., vol. 47, p. 155–157, June 1939.